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ATGCTGCGTCGGCGGGGCAGCCCTGGCATGGGTGTGCATGTGGGTGCAGCCC
TGGGAGCACTGTGGTTCTGCCTCACAGGAGCCCTGGAGGTCCAGGTCCCTGA
AGACCCAGTGGTGGCACTGGTGGGCACCGATGCCACCCTGTGCTGCTCCTTCT
CCCCTGAGCCTGGCTTCAGCCTGGCACAGCTCAACCTCATCTGGCAGCTGAC
AGATACCAAACAGCTGGTGCACAGCTTTGCTGAGGGCCAGGACCAGGGCAG
CGCCTATGCCAACC GCACGGCCCTCTTCCCGGACCTGCTGGCACAGGGCAAC
GCATCCCTGAGGCTGCAGCGCGTGCCTGTGGCGGACGAGGGCAGCTTCACCT
GCTTCGTGAGCATCCGGGATTTCCGGCAGCGCTGCCGTGACCTGCAGGTGGC
CGCTCCCTACTCGAAGCCCAGCATGACCCTGGAGCCCAACAAGGACCTGCGG
CCAGGGGACACGGTGACCATCACGTGCTCCAGCTACCGGGGCTACCCTGAGG
CTGAGGTGTTCTGGCAGGATGGGCAGGGTGTGCCCCTGACTGGCAACGTGAC
CACGTCGCAGATGGCCAACGAGCAGGGCTTGTTTGATGTGCACAGCGTCCTG
CGGGTGGTGTGCTGGGTGCGAATGGCACCTACAGCTGCCTGGTGCGCAACCCCG
TGCTGCAGCAGGATGCGCACGGCTCTGTCACCATCACAGGGCAGCCTATGAC
ATTCCCCCAGAGGCCCTGTGGGTGACCGTGGGGCTGTCTGTCTGTCTCATTG
CACTGCTGGTGGCCCTGGCTTTTCGTGTGCTGGAGAAAGATCAAACAGAGCTG
TGAGGAGGAGAATGCAGGAGCTGAGGACCAGGATGGGGAGGGAGAAGGCTC
CAAGACAGCCCTGCAGCCTCTGAAACACTCTGACAGCAAAGAAGATGATGG
ACAAGAAATAGCCTGA

FIG. 1

ATGCTGCGTCGGCGGGGCAGCCCTGGCATGGGTGTGCATGTGGGTGCAGCCC
TGGGAGCACTGTGGTTCTGCCTCACAGGAGCCCTGGAGGTCCAGGTCCCTGA
AGACCCAGTGGTGGCACTGGTGGGCACCGATGCCACCCTGTGCTGCTCCTTCT
CCCCTGAGCCTGGCTTCAGCCTGGCACAGCTCAACCTCATCTGGCAGCTGAC
AGATACCAAACAGCTGGTGCACAGCTTTGCTGAGGGCCAGGACCAGGGCAG
CGCCTATGCCAACC GCACGGCCCTCTTCCCGGACCTGCTGGCACAGGGCAAC
GCATCCCTGAGGCTGCAGCGCGTGCCTGTGGCGGACGAGGGCAGCTTCACCT
GCTTCGTGAGCATCCGGGATTTCCGGCAGCGCTGCCGTGACCTGCAGGTGGC
CGCTCCCTACTCGAAGCCCAGCATGACCCTGGAGCCCAACAAGGACCTGCGG
CCAGGGGACACGGTGACCATCACGTGCCCCAGCTACCGGGGCTACCCTGAGG
CTGAGGTGTTCTGGCAGGATGGGCAGGGTGTGCCCCTGACTGGCAACGTGAC
CACGTCGCAGATGGCCAACGAGCAGGGCTTGTTTGATGTGCACAGCGTCCTG
CGGGTGGTGTGCTGGGTGCGAATGGCACCTACAGCTGCCTGGTGCGCAACCCCG
TGCTGCAGCAGGATGCGCACGGCTCTGTCACCATCACAGGGCAGCCTATGAC
ATTCCCCCAGAGGCCCTGTGGGTGACCGTGGGGCTGTCTGTCTGTCTCATTG
CACTGCTGGTGGCCCTGGCTTTTCGTGTGCTGGAGAAAGATCAAACAGAGCTG
TGAGGAGGAGAATGCAGGAGCTGAGGACCAGGATGGGGAGGGAGAAGGCTC
CAAGACAGCCCTGCAGCCTCTGAAACACTCTGACAGCAAAGAAGATGATGG
ACAAGAAATAGCCTGA

FIG. 2

APPROVED	O.G. FIG.	
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MLRRRGSPGMGVHVGAALGALWFCLTGALEVQVPEDPVVALVGTDATLCCSFS
 PEPGFSLAQLNLIWQLTDTKQLVHSFAEGQDQGSAYANRTALFPDLLAQGNASL
 RLQVRVVADEGSFTCFVSIRDFGSAAVSLQVAAPYSKPSMTLEPNKDLRPGDVT
 ITCSSYRGYPEAEVFWQDGGQVPLTGNVTTSQMANEQGLFDVHSVLRVVLGAN
 GTYSCLVRNPVLQQDAHGSVTITGQPMTFPPEALWVTVGLSVCLIALLVALAFV
 CWRKIKQSCEEENAGAEDQDGEGEKSKTALQPLKHSDSKEDDGQEIA

FIG. 3

MLRRRGSPGMGVHVGAALGALWFCLTGALEVQVPEDPVVALVGTDATLCCSFS
 PEPGFSLAQLNLIWQLTDTKQLVHSFAEGQDQGSAYANRTALFPDLLAQGNASL
 RLQVRVVADEGSFTCFVSIRDFGSAAVSLQVAAPYSKPSMTLEPNKDLRPGDVT
 ITCPSYRGYPEAEVFWQDGGQVPLTGNVTTSQMANEQGLFDVHSVLRVVLGAN
 GTYSCLVRNPVLQQDAHGSVTITGQPMTFPPEALWVTVGLSVCLIALLVALAFV
 CWRKIKQSCEEENAGAEDQDGEGEKSKTALQPLKHSDSKEDDGQEIA

FIG. 4

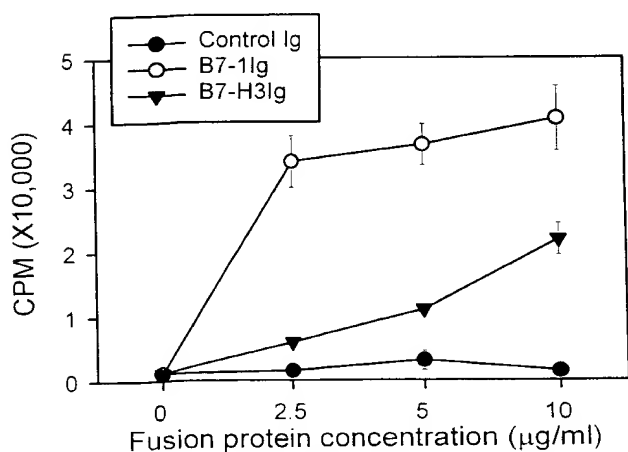


FIG. 8A

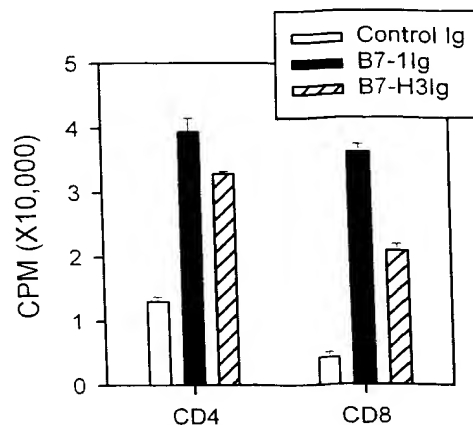


FIG. 8B

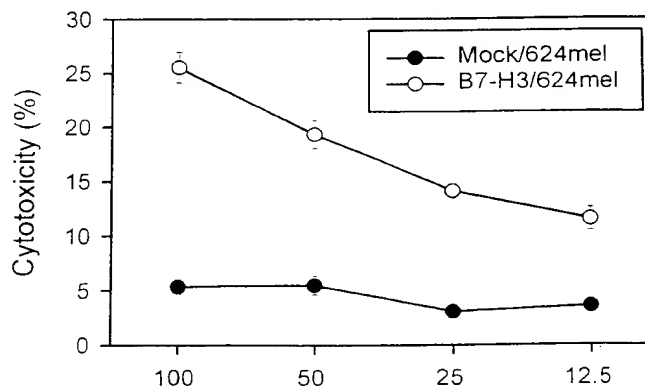


FIG. 8C E:T

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APPROVED	O.G. F&A
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DRAWN MAN	

hB7-H3 1 MLRRRGSPG **MGV** HVGAA---LGALWFCITGAEVQV **VED**---PMAV **VG**DTATLCSESP **EP**GESLAQIN **I**WQ 68
hB7-H2 1 MRLGS-----PGLFLIFS-SURADTQEK---EVR **AV**GSDEL **SO**ACPEGS **R**FDND **W**YMQ 55
hB7-H1 1 MRLFAVFI---FMTYHILN-AETVTVPKD---LYVVEYGSNM **TE**CKFPVEKQLD **LA**ALIWYE 58
hB7-2 1 MGLSN-----ILFMAF-LLSGAAPLK---IQAYENETAD **LC**CFANSONQSL **SE**WFWQ 52
hB7-1 1 MGHTIR **ROG** **T**SPSKCPYLNF **FE**LLV **AG**LSHC **SG**VTH **MT**KEKE **VAT**LSGHNVS-VEE **LA**QTR **I**WQ 67

*

hB7-H3 69 LTD---TKD **V**HSFAE---GDDQGS **AN**RTAL **FP**DL **LA**Q **GN**ASRLRQVRV **AD**ES **T**CE **MS**- **IR**DF **GS**AAVS- 135
hB7-H2 56 TSESK **TM**VTYH **IP**ONSSLE **NS**SRNRAL **MS**PAGM **RG**DFSLR **LF**NT **PO**DEQ **KE**FLVL-**SO**SL **GF**Q **EV**LS 127
hB7-H1 59 MEDKN **I**Q **VH**GEED---LKVQHSSVRORAR **LL**KDQLS **GN**AA **LI**TDVK **LO**DAG **W**RCMIS-YGGADYKR **IT**- 127
hB7-2 53 DOENLVL **NE**W **LG**KEK-FDS **VS** **HS**K **MG**RTSFD-----SDS **MT**LR **HL**N **LI**KDK **GL**YQCI **TH**KK **PT**GM **IR**IHQ 119
hB7-1 68 KEY---KML **TV**MSGD---MNI **W**PEY **K**NR **TI**FD---IT **NN** **S** **IM** **IL**AL **RP** **SD**EG **TV**EC **VM**L **K**YEKDA **K**REHL 131

*

hB7-H3 136 LOVAAPYSKPSMTLE **PN**KDLR **PG**D---T **VT** **IT**CS **SV**RGY **PE**AE---V **FM**DDGGGV **PL**TGNV **MT** **TS**QMANE---QGL 201
hB7-H2 128 VEVTL **MA** **NS** **VS** **PM** **VS** **AP** **HS** **PS** **QD**-EL **TF**CT **S** **ING**Y **PR**EN---V **MY** **MT** **K** **DN**SL **DO**AL **Q**ND **TV**FL **N**MRGL 196
hB7-H1 128 KVNAPYN---KINQRLV **VD**PTS-EHEL **TC**QA-EGY **PK**AE---V **MT** **SS** **D** **H**Q **VL**SGK **TT** **TS** **NR**KE---EKL 190
hB7-2 120 MNSLSM **AN** **FS** **Q** **PE** **IM** **PI** **SN** **IT** **EN** **VI** **IN** **LC** **SS** **IH** **GY** **PE** **PK** **MS** **ML** **LR** **T** **KN** **ST** **IE** **YD** **GI** **M** **Q** **S** **OD** **NV**---TEL 190
hB7-1 132 AEVTL **SN** **K** **AD** **PT** **PS** **IS** **DF** **E** **I** **PT** **SN**-IRR **IT** **CS** **TS** **SG** **GF** **PE** **PH**---S **ML** **E** **NG** **EE** **NA** **IT** **VS** **QD** **PE**---TEL 197

*

hB7-H3 202 FDI **SM**LRVWL---GANG **TS** **CL**VRNP **VL**Q---DAHGS-V **IT** **TG** **Q** **PM** **IF** **PP** **EAL** **W** **TV** **GL** **SV** **GL** **IA** 261
hB7-H2 197 YDV **SM**LR **IAR**---TP **SV** **NI** **GC** **IE** **NV** **LL** **Q** **N** **L** **TV** **GS** **Q** **TD** **IG** **ER** **DK** **IT** **EN** **PV** **ST** **GE** **KN**-A **AT** **MS** **IL** **AV** **LC** 265
hB7-H1 191 FMT **ST** **LR** **INT**---T **T** **NE** **IF** **Y** **CT** **FR** **LD** **PEE**---N **IT** **AE** **L** **VI** **PE** **LA** **PP** **NR** **TH** **LV** **IL** **GA** **IL** **C** 250
hB7-2 191 YDV **SI** **LS** **VS** **FP** **DV** **TS** **MT** **IL** **FC** **IL** **ED** **K** **TR** **LL**---SS **PF** **S**---T **EE** **ED** **PP** **PD** **HI** **PW** **IT** **AV** **PT** **VI** **IC** 253
hB7-1 198 YAV **SS** **K** **LD** **FM**---T **TM** **S** **FM** **CL** **IK** **Y** **GL** **RV**---N **OT** **FN**---N **IT** **T** **Q** **EH** **FD** **PN** **LL** **PS** **MA** **IT** **LS** **UN** 255

hB7-H3 262 LL **VA** **AF** **VC**-**WR** **IK** **QS** **EE** **EN** **AGA** **ED** **QD** **GE** **GS** **K** **TAL** **Q** **PL** **HS** **DS** **K** **EDD** **Q** **GE** **IA** 316
hB7-H2 266 LV **VA** **VA** **IG**-**WC** **DR** **CL** **HS** **YAGA** **AV** **SP**ET-----EL **T** **GH** **V** 302
hB7-H1 251 LG **VA** **IT** **IF**-RL **R** **KG** **MD** **V** **K** **CG** **QD** **NS** **KK**-----Q **S** **D** **TH** **LE** **ET** 290
hB7-2 254 VM **FC** **IL** **IK** **KK** **RP** **NS** **Y** **CG** **IT** **ME** **ES**-E **Q** **T** **K** **R** **E** **K** **I** **H** **I** **P** **ER** **S** **EA** **Q** **R** **V** **F** **K** **SS** **T** **S** **SD** **K** **S** **D** **T** **C** **F** 323
hB7-1 256 GL **F** **VE** **CL** **IT**-Y **C** **F** **AP** **R** **R** **RR**-----V **R** **PE** **LR** **ES** 288

FIG. 5A



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FIG. 5B	CLASS	SUBCLASS
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signal peptide
 MLRRRGSPGMGVHVGAAALGALWFCLTGALEVQVPEDPVVALVGTDATLCCSFSPGPGFSLAQLNLIWQLTDTKQLVHSFAEGQDQGSAY
IgV-like domain
 ANRTALFPDLLAQGNASLRQLQRVRVADEGSFTCFVSIRDFGSAAVSLQVAAPYSKPSMTLEPNKDLRPGDTVTITCSSYRGYPEAEVFW
IgC-like domain
 QDGGVPLTGNVTTSQMANEQGLFDVHSVLRVVLGANGTYSCLVRNPVLQQDAHGSVTITGQPMTFPPEALWTVGLSVCLIALLVALA
IC
 FVCWRKIKQSCSEENAGAEDQDGEGETALQPLKHSKSKEDDGGQEIA
TM

FIG. 5B



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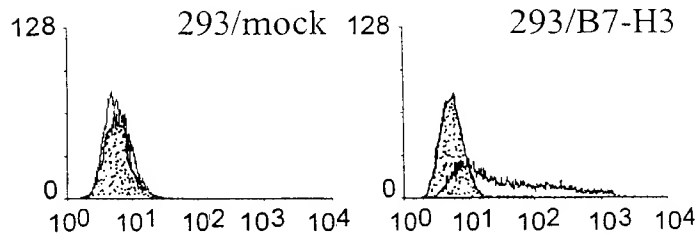


FIG. 6A

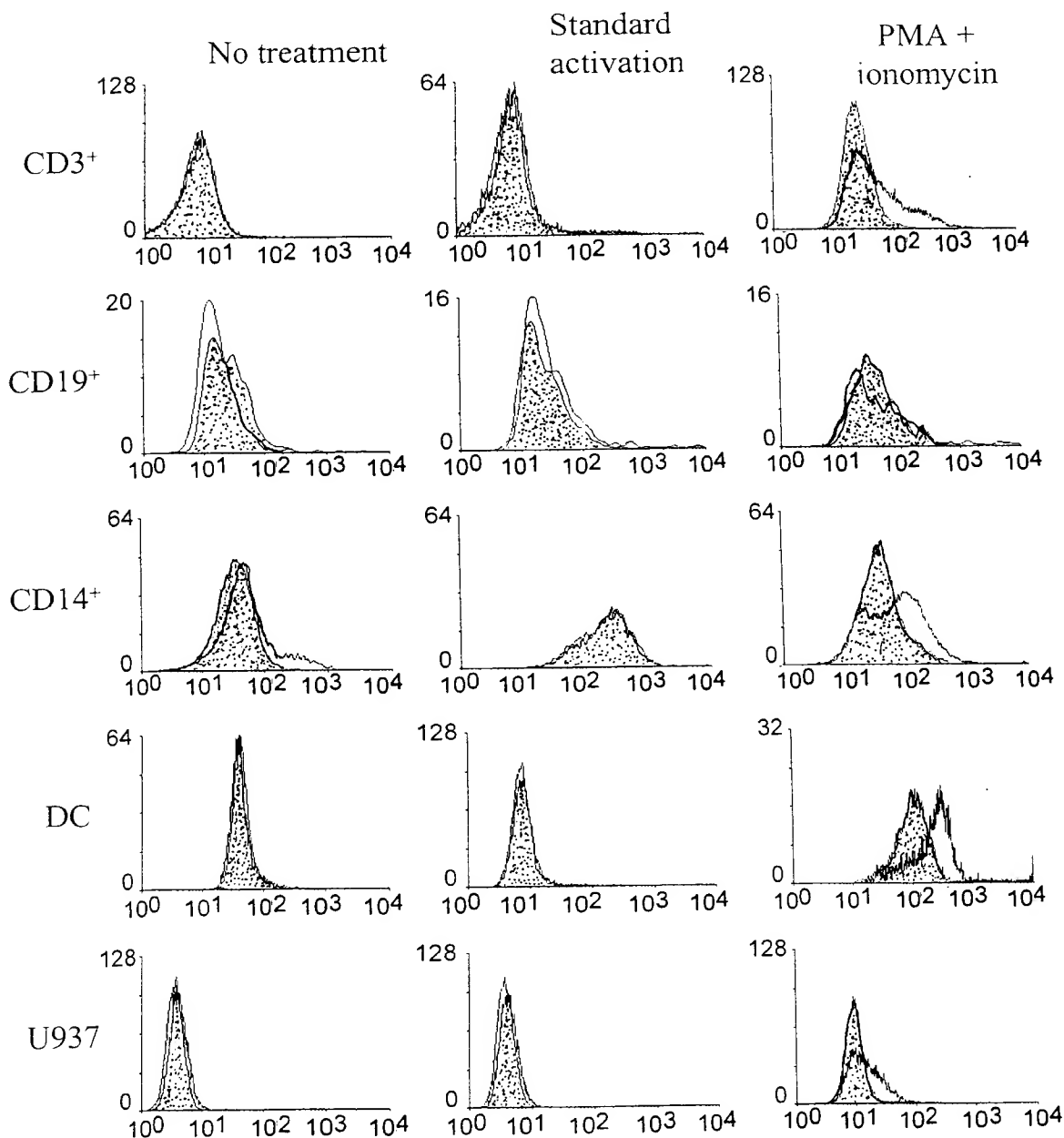


FIG. 6B

NOV 10 2002	O.G.F.A.	CLASS. SUBCLASS.
BY	DEPARTMENT	



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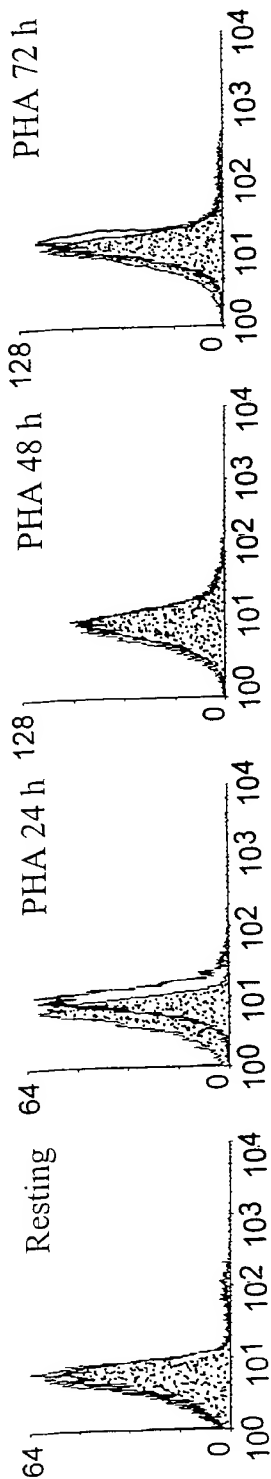


FIG. 7A

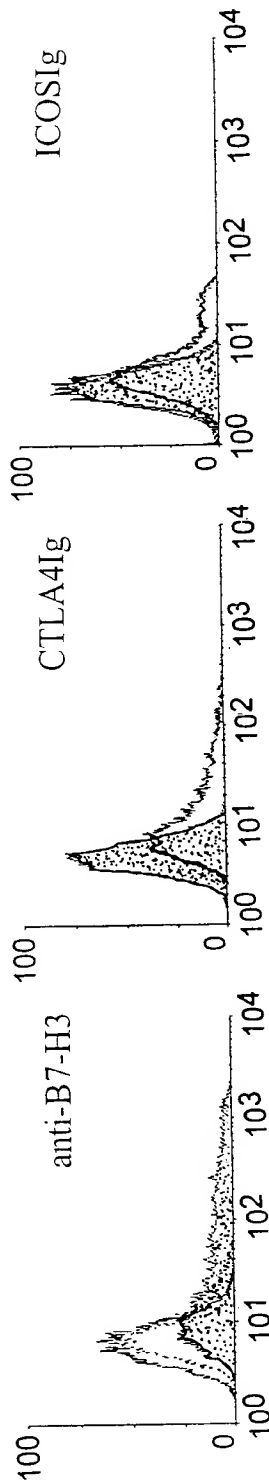


FIG. 7B



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ATGGCTTCCCTGGGGCAGATCCTCTTCTGGAGCATAATTAGCATCATCATTAT
TCTGGCTGGAGCAATTGCACTCATCATTTGGCTTTGGTATTTTCAGGGAGACACT
CCATCACAGTCACTACTGTCGCCTCAGCTGGGAACATTGGGGAGGATGGAAT
CCTGAGCTGCACTTTTGAACCTGACATCAAACCTTTCTGATATCGTGATACAAT
GGCTGAAGGAAGGTGTTTTAGGCTTGGTCCATGAGTTCAAAGAAGGCAAAGA
TGAGCTGTCGGAGCAGGATGAAATGTTTCAGAGGCCGGACAGCAGTGTGCT
GATCAAGTGATAGTTGGCAATGCCTCTTTGCGGCTGAAAAACGTGCAACTCA
CAGATGCTGGCACCTACAAATGTTATATCATCACTTCTAAAGGCAAGGGGAA
TGCTAACCTTGAGTATAAACTGGAGCCTTCAGCATGCCGGAAGTGAATGTG
GACTATAATGCCAGCTCAGAGACCTTGCGGTGTGAGGCTCCCCGATGGTTCC
CCCAGCCCACAGTGGTCTGGGCATCCCAAGTTGACCAGGGAGCCAACCTTCTC
GGAAGTCTCCAATACCAGCTTTGAGCTGAACTCTGAGAATGTGACCATGAAG
GTTGTGTCTGTGCTCTACAATGTTACGATCAACAACACATACTCCTGTATGAT
TGAAAATGACATTGCCAAAGCAACAGGGGATATCAAAGTGACAGAATCGGA
GATCAAAGGCGGAGTCACCTACAGCTGCTAAACTCAAAGGCTTCTCTGTGT
GTCTCTTCTTTCTTTGCCATCAGCTGGGCACTTCTGCCTCTCAGCCCTTACCT
GATGCTAAAATAA

FIG. 9

MASLGQILFWSIIIIILAGAIALIIGFGISGRHSITVTTVASAGNIGEDGILSCTFEPD
IKLSDIVIQWLKEGVLGLVHEFKEGKDELSEQDEMFRGRTAVFADQVIVGNASLR
LKNVQLTDAGTYKCYIITSKGKGNANLEYKTGAFSMPEVNVDYNASSETLRCEA
PRWFPQPTVVWASQVDQGANFSEVSNTSFELNSENVTMKVVSVLNVNTINTYS
CMIENDIAKATGDIKVTSEIKRRSHLQLLNSKASLCVSSFFAISWALLPLSPYLM
LK

FIG. 10



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B7-H4 ISGRHSITVTTVASAGNIGEDGILSCITF--EPDIKISQIMTQMLKEG--VLGLVHEFEKEGKD
B7-H2 LRAOTQEKEVRANWGSDELSCACPEGSFRDNDWVYQTSSEKTYWYHIIPQNSSL
B7-H3.2 QVPEDPVVALVGTDAITCCSFSPGFSLAQLN[]WQLTD--TKQLVHSFAEGQD
B7-H1 VTVPKDLVYVEYGSNMITECKFPVEKQLDLAALIVYWEEMEDKNITQFVHGEEDLKV
B7-2 QAYFNETADLPCQFANSQNSLSELWFWQDQENLVNEMVYLKGEKFD
B7-1 LNFFQLLVLAGLSHFCSGVIHVTKEVATLSGHN--VSVEELATRIYWQKEK--KMVLTMMSQNMNI
*
B7-H4 ELSEQDEMFRGRTAVFADQVI VGNASRLKNNQLTDAGTYKCYITITSGK--GNANLEYKTGAFS-----M
B7-H2 EN--VDSRYNRAL MSPAGMLRGDFSLRLFNMTPODEQKFHCLVLSQLG--FQEMLSIEVTLHVAANFSV
B7-H3.2 -----QGSAYANRTALFPDLIAQGNASRLQRVRVADGSGTCEVMSIRDFG--SAAVSLOVAAPYSKPSMTL
B7-H1 -----QHSSYPCQARLLKDQLSLGNAALQITDKLQDAGVRCMTSYGGAD--YKRIITVKVNAPYN---KIN
B7-2 S---VHSKYMGRITSFDS-----SWTLRLHNLQJKKGLYOCITHHKPTGMIRI HQMNSSEL SVLANFSQ
B7-1 -----WPEYKNIIRITF--D--ITNLSJMI ALRPSDEGTYECVVLKYEKDAFKREHLAEVTL SVKADFPT
*
B7-H4 PEMN--VDYNAS--SEITLRCEAPRMFPQP--TMWASQVDQGANFSEVNSTFELNSENMTMKVWSMLY---
B7-H2 PMWSAPHSPSQD--ELTETCTISINGYPRP--NMYWINKTDSLDOALONDITVFLNVRGLYDMSMLRI---
B7-H3.2 EPNKD-LRPGD--TVITTCPSYRGYPEA--EMFMD--GGGVPLTGNVITTSQMANEQGLFDMHSMLRM---
B7-H1 QRITLV-VDPPTS--EHELTCQAL--EGYPKA--EMVMTS--SDHQVLSGKTITTNKREELFNWITSILRI---
B7-2 PEIIVPISNITENVYINLTCSIIHGYPEPKMSVLLRTKNSTIEYDGMOKSQDQWTEL YDMSISLSVSFP
B7-1 PSISDFEITPTSN--IRRIITCSISGGTPEP--HLSMLE--NGEELNAINITVSQDPETELYAVSSKLDL---
*
B7-H4 NVTINNTYSCTMIENDIAKATGDI-----KVTESEIKRRSHLQLLSK
B7-H2 ARTPSVNI GCTIENVLLQQLTVGSQTGNDIGERDKITENPNVSTGEKNAAT
B7-H3.2 VILGANGTYSCLVRNPVLQDAHG-----SVTITGQP-MTFPP
B7-H1 NITITNEIYCTFRRLDPEENHTA-----ELVTELP-LAHPPNERTH
B7-2 DVTSNMTHFCILETDKTRLLSSP-----FSIELEDL--QPPPDHIP
B7-1 NMTNHSFMC LJKYGHLRVNDTF-----NWNITKQE---HFBDN

FIG. 11



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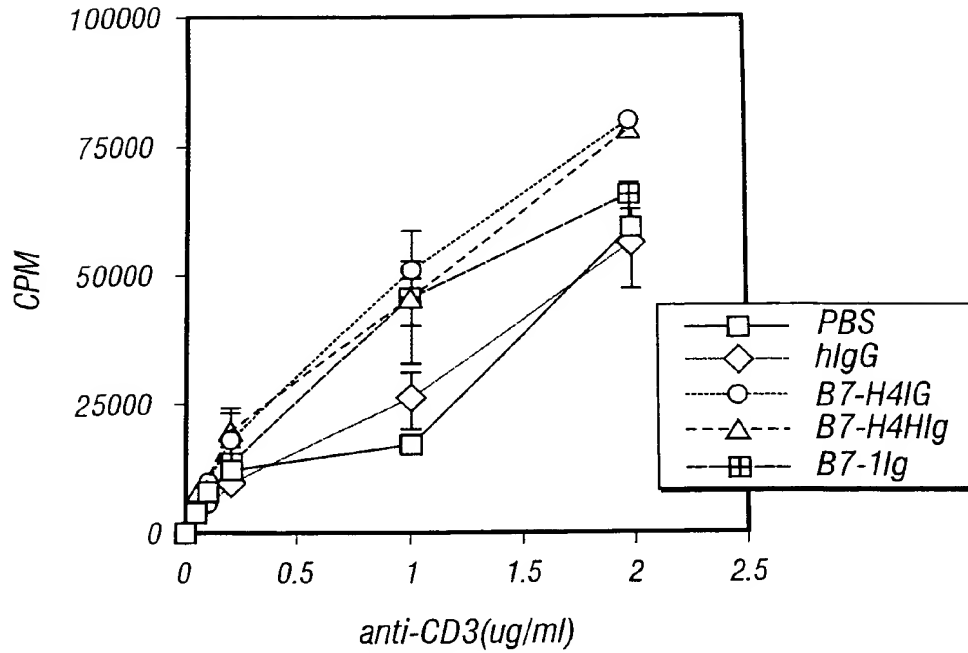


FIG. 12

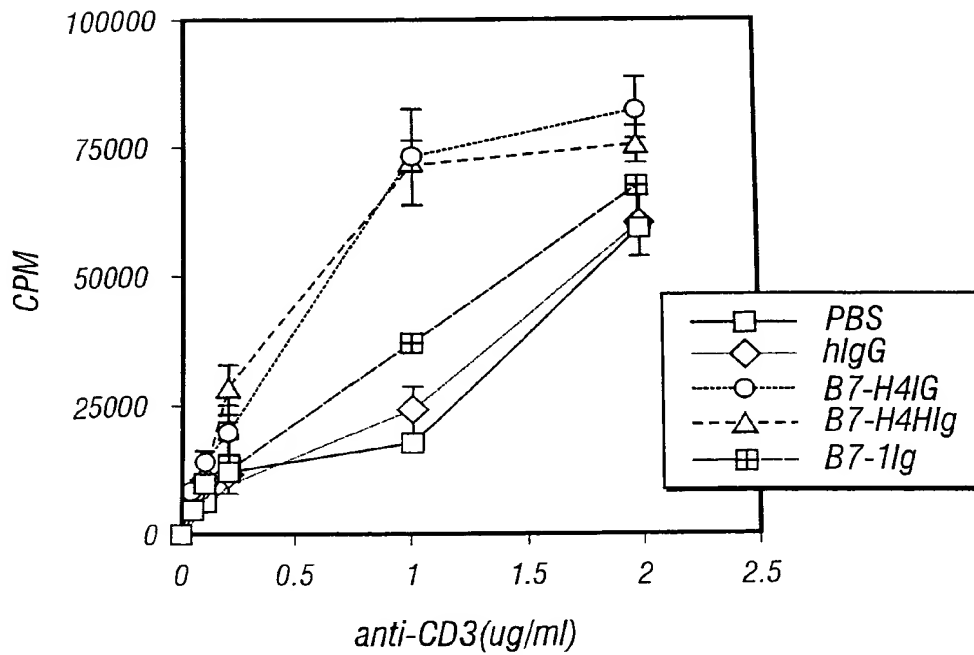


FIG. 13



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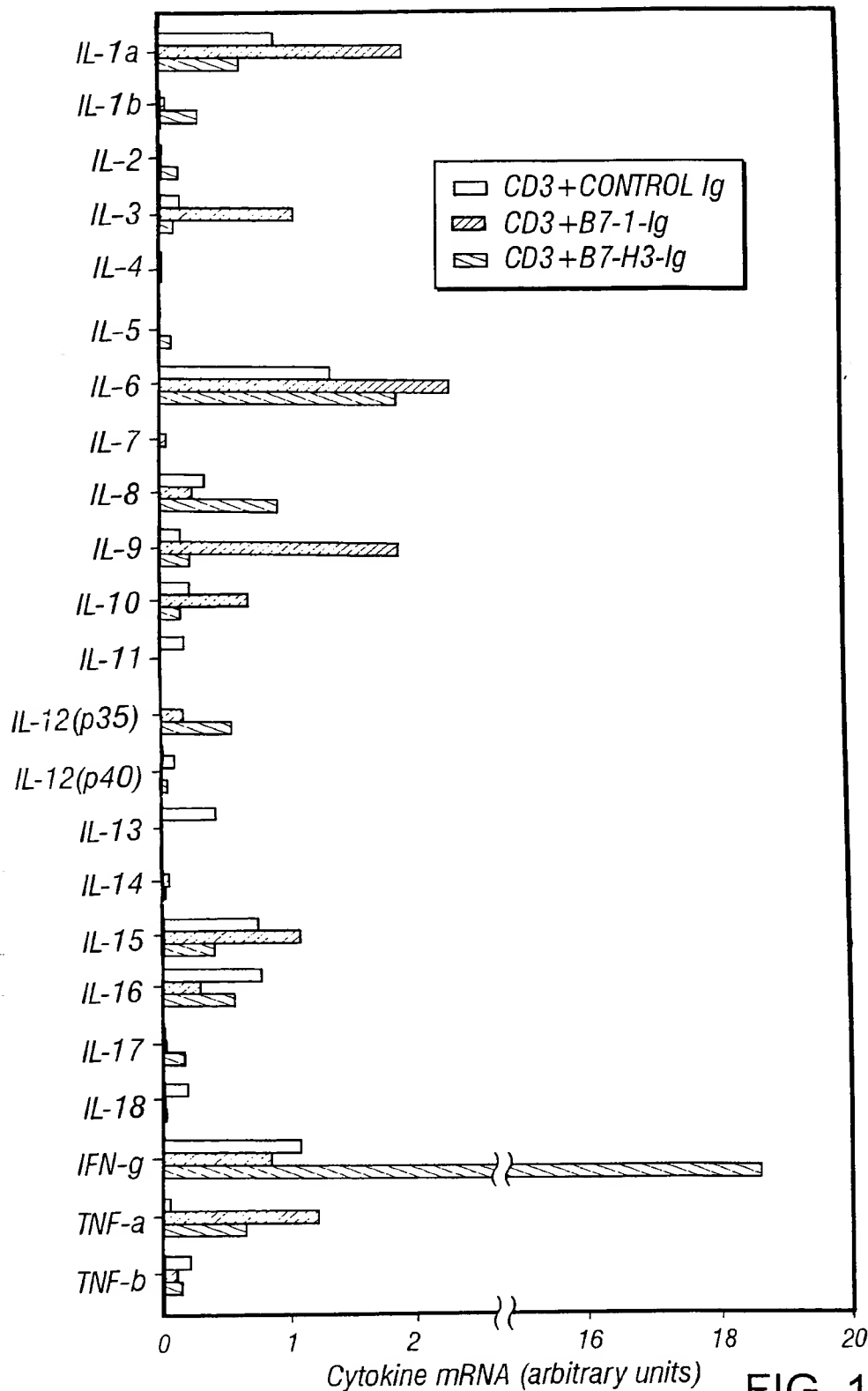


FIG. 14